Active authentication by one time password based on unique factor and behavioral biometric

ABSTRACT

Multi factor authentication technology based on onetime password (OTP) is utilized in many fields because of this technology's high security. However, existing OTP schemes suffer from several drawbacks. Moreover, OTP schemes are vulnerable either because of a weakness in hardware devices (e.g., token devices that apply OTP schemes) or because of the use of weak algorithms or methods to generate OTP. A novel authentication scheme based on OTP is presented in this paper. The scheme generates OTP based on unique numbers in addition to the user's behavioral biometric. The purpose of the proposed system is to make the OTP more difficult, thereby restricting unauthorized access. The OTP is made extremely secure and unpredictable. The proposed system can ensure that the user who misuses the system is made liable. Therefore, the system is fit for fields that require high security guarantees, such as e-banking systems, e-government systems, and e-commerce systems.

Keyword: Authentication; One time password; Behavioral biometric; Security; Multi factor; Non-repudiation